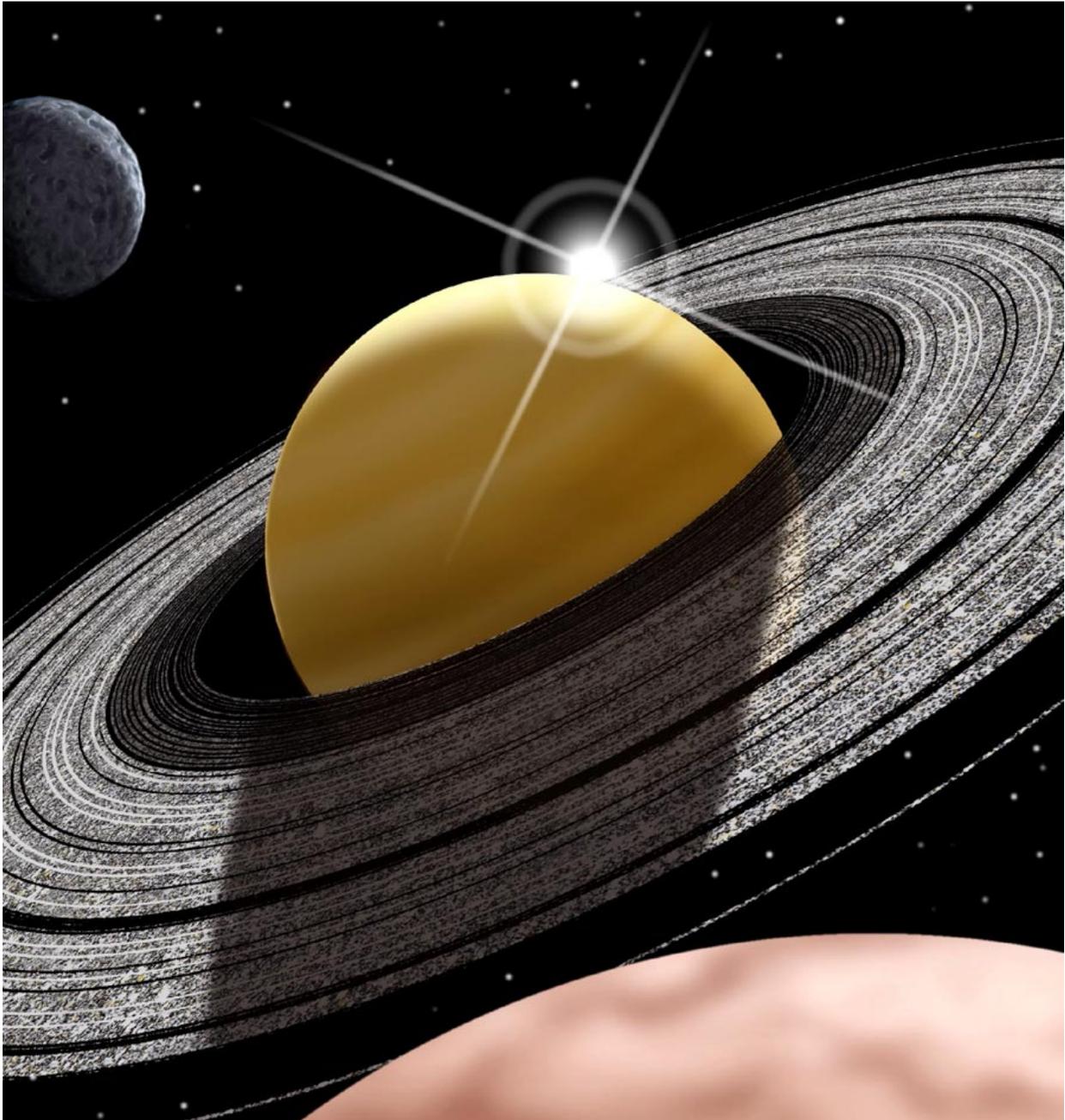




Introducing Saturn

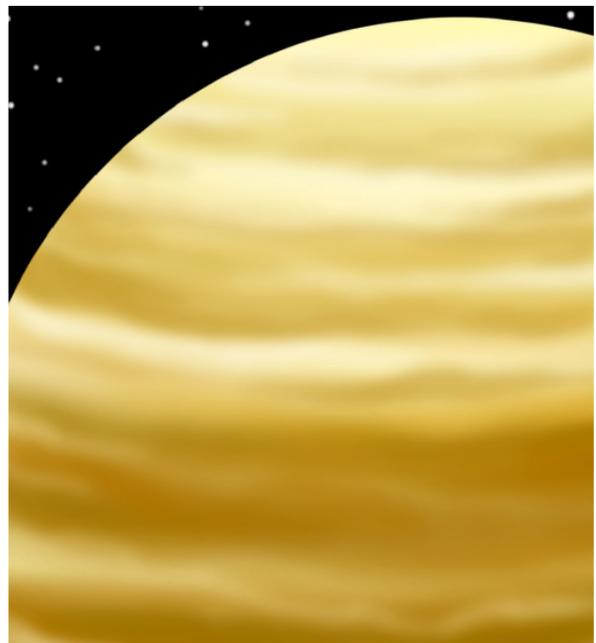
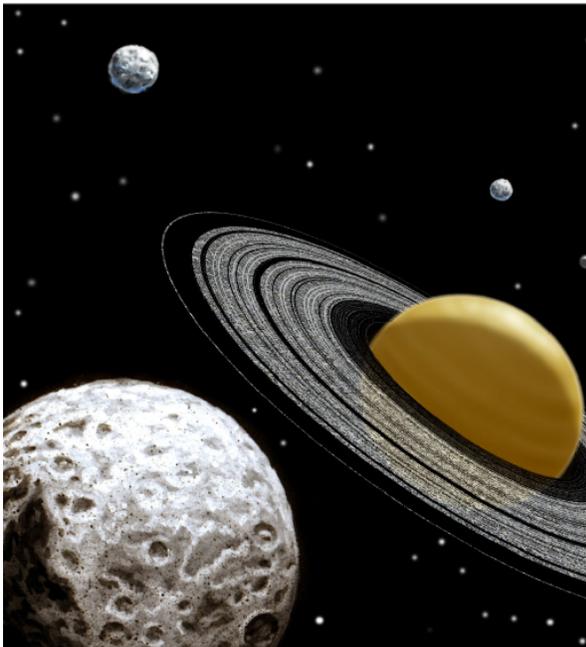
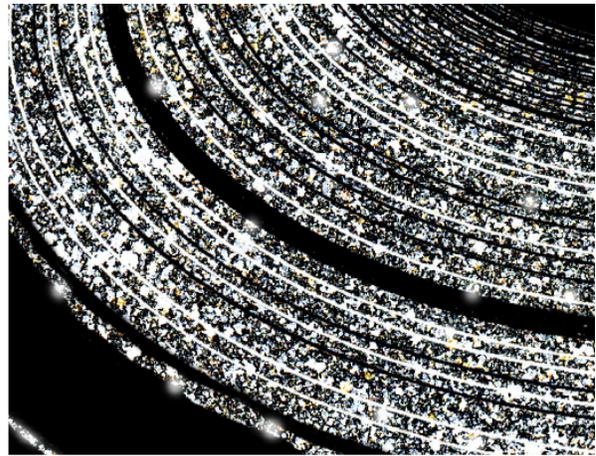
Questions, Answers, and Cool Things to Think About



Discovering Saturn: The Real Lord of the Rings

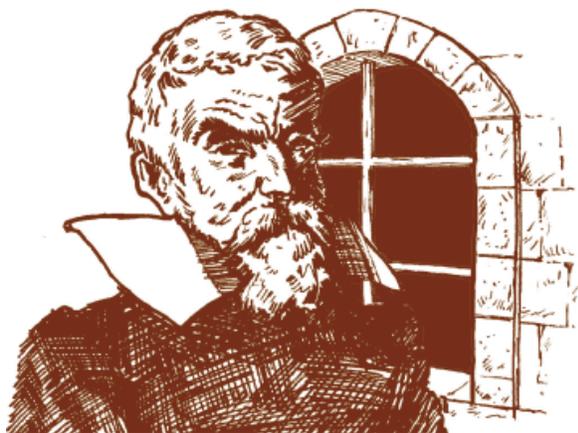
Mysterious rings, strange and wonderful moons, and bands of gold, brown, and white, in which storm clouds swirl. This is the sixth planet from the Sun, Saturn! Saturn has been called "The Jewel of the Solar System." Look at the pictures on this page. What other nicknames would you give Saturn? Scientists believe that Saturn formed more than four billion years ago from the same giant cloud of gas and dust, whirling around the very young Sun, that formed Earth and the other planets of our solar system. But Saturn is much larger than Earth. Its mass is 95.18 times Earth's mass. In other words, it would take over 95 Earths to equal the mass of Saturn. If

you could weigh the planets on a giant scale, you would need slightly more than 95 Earths to equal the weight of Saturn! Saturn's diameter is about 9.5 Earths across. At that ratio, if Saturn were as big as a baseball, Earth would be about half the size of a regular M&M candy.

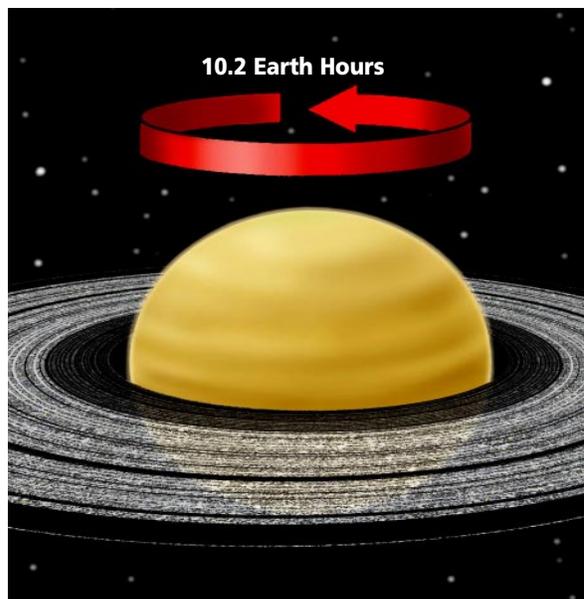


Saturn spins on its axis (rotates) just as our planet Earth spins on its axis. However, its period of rotation, or the time it takes Saturn to spin around one time, is only 10.2 Earth hours. That means that a day on Saturn is just a little more than 10 hours long. So, if you lived on Saturn, you would only have to be in school for a couple hours each day! Because Saturn spins so fast, and its interior is gas, not rock, Saturn is noticeably flattened, top and bottom. Saturn is 10 percent fatter in the middle than at the poles.

Saturn is much farther from the Sun than is Earth. In fact, it gets only about 1/90 the amount of sunlight as does Earth. It takes Saturn almost 29-1/2 years to revolve once around the Sun. Can you figure out how old you are in Saturn years? Like the inner



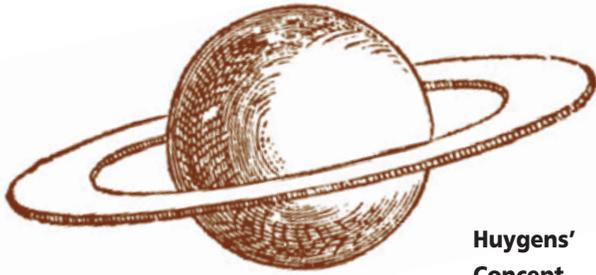
Galileo



Length of a Saturn Day

planets and Jupiter, Saturn is clearly visible to the naked eye in the night sky, so people have known about it for many thousands of years. The ancient Romans named the planet after their god of agriculture. It wasn't until 1610, however, that anyone saw Saturn's rings. That's when Galileo looked at the planet through one of the world's first telescopes. But his telescope wasn't powerful enough to show the rings clearly, and Galileo thought he was looking at some kind of triple planet.

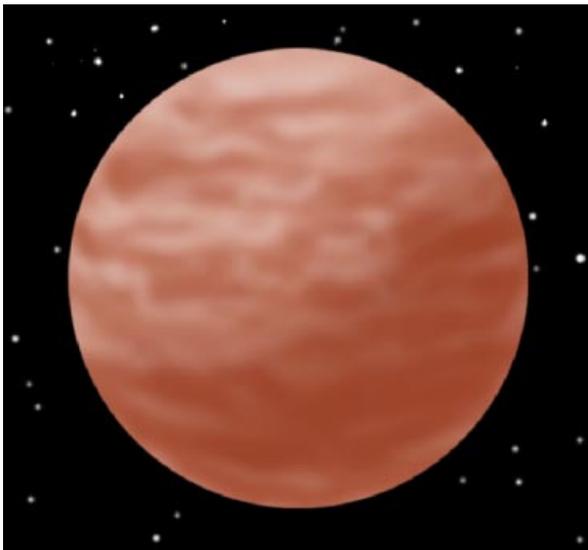
Later, in 1655, a Dutch astronomer named Christiaan Huygens looked at Saturn through a more powerful tele-



**Huygens'
Concept
of Saturn**

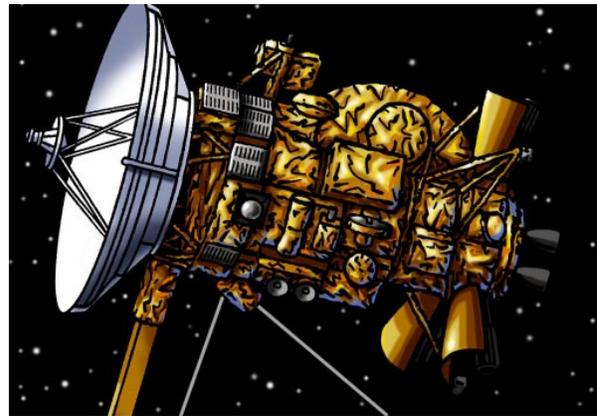
scope, and figured out that the planet is surrounded by a giant flat ring.

Although people have been observing and studying Saturn for thousands of years, first with just their eyes, and then with telescopes and robotic spacecraft, things will get really exciting in July 2004. That is when the Cassini-Huygens spacecraft is scheduled to arrive at Saturn. Cassini-Huygens is really two spacecraft. The Huygens probe (named after the Dutch



Titan

astronomer we mentioned earlier) is riding along with Cassini until they go into orbit around Saturn. Then Huygens will fly off to Saturn's largest moon, Titan. We've never been able to see Titan's surface, because it's hidden under a thick, smoggy atmosphere. But Huygens will parachute down



Cassini-Huygens Spacecraft

through the atmosphere for 2-1/2 hours and spend up to 60 minutes on Titan's surface before it stops working, sending us pictures and new information about Titan.

Meanwhile, the Cassini spacecraft will continue to orbit Saturn and send us information about its rings, its moons, and the planet itself until the year 2008! What grade will you be in then?